In the Claims

Please amend the claims as follows:

1. (Currently amended) A semiconductor apparatus, comprising:

a substrate having a substrate surface;

a first dielectric layer comprising molecules of a first compound, the molecules of the first compound having first ends and second ends, the first ends being covalently bonded to a first region of said substrate surface, said second ends having aromatic regions comprising at least y minus 2 conjugated pi-electrons, in which y is an integer of 10 or more; and

a polycrystalline semiconductor layer comprising organic semiconductor molecules with aromatic portions comprising y conjugated pi-electrons, said polycrystalline semiconductor layer being on said first region of said substrate.

2. (Cancelled)

3. (Currently amended) A semiconductor apparatus, comprising:

a substrate having a substrate surface;

a first dielectric layer comprising molecules of a first compound, the molecules of the first compound having first ends and second ends, the first ends being covalently bonded to a first region of said substrate surface, said second ends having aromatic regions; and

a polycrystalline semiconductor layer comprising organic semiconductor molecules with aromatic portions, said polycrystalline semiconductor layer being on said first region of said substrate ~~The semiconductor apparatus of claim 1~~, in which said organic semiconductor molecules comprise a non-aromatic substituent.

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Original) The semiconductor apparatus of claim 1, in which a single crystal of said organic semiconductor molecules is on at least about half of said first region.

9. (Original) The semiconductor apparatus of claim 1, further comprising:

a gate electrode;

a source electrode; and

a drain electrode;

said source and drain electrodes being in contact with a channel portion of said polycrystalline semiconductor layer on said first region, said gate electrode being positioned to control a conductivity of said channel portion.

10. (Currently amended) The semiconductor apparatus of claim 1 ~~claim 2~~ further comprising a second dielectric layer comprising molecules of a second compound, the molecules of the second compound having third ends and fourth ends, the third ends being covalently bonded to a second region of said substrate surface, said fourth ends comprising no more than y minus 8 conjugated pi-electrons.

11. (Currently amended) The semiconductor apparatus of claim 1 ~~claim 2~~, in which said molecules of the first compound comprise at least three conjugated aromatic rings.

12. (Original) The semiconductor apparatus of claim 10 in which said first and second regions form a pattern on said substrate.

13. (Currently amended) A method of making a semiconductor apparatus, comprising the steps of:

providing a substrate having a substrate surface;

providing a first dielectric layer comprising molecules of a first compound, the molecules of the first compound having first ends and second ends, the first ends being covalently bonded to a first region of said substrate surface, said second ends having aromatic

regions comprising at least y minus 2 conjugated pi-electrons, in which y is an integer of 10 or more; and

providing a polycrystalline semiconductor layer comprising organic semiconductor molecules with aromatic portions comprising y conjugated pi-electrons, said polycrystalline semiconductor layer being on said first region of said substrate.

14. (Cancelled)

15. (Original) The method of claim 13, further comprising the steps of:

providing a gate electrode;

providing a source electrode;

providing a drain electrode; and

placing said source and drain electrodes in contact with a channel portion of said polycrystalline semiconductor layer on said first region, said gate electrode being positioned to control a conductivity of said channel portion.

16. (Original) The method of claim 13, comprising the further step of applying a solution of said organic semiconductor molecules to said first region.

17. (Currently amended) The method of claim 13 ~~claim 14~~ further comprising the step of providing a second dielectric layer comprising molecules of a second compound, the molecules of the second compound having third ends and fourth ends, the third ends being covalently bonded to a second region of said substrate surface, said fourth ends comprising no more than y minus 8 conjugated pi-electrons.

18. (Original) The method of claim 17 further comprising the step of forming a pattern by said first and second regions on said substrate.

19. (Currently amended) An integrated circuit, comprising:

a substrate having a substrate surface;

a first dielectric layer comprising molecules of a first compound, the molecules of the first compound having first ends and second ends, the first ends being covalently bonded to a first region of said substrate surface, said second ends having aromatic regions comprising at least y minus 2 conjugated pi-electrons, in which y is an integer of 10 or more;

a polycrystalline semiconductor layer comprising organic semiconductor molecules with aromatic portions comprising y conjugated pi-electrons, said polycrystalline semiconductor layer being on said first region of said substrate;

a gate electrode;

a source electrode; and

a drain electrode;

said source and drain electrodes being in contact with a channel portion of said polycrystalline semiconductor layer on said first region, said gate electrode being positioned to control a conductivity of said channel portion.

20. (Currently amended) A method of making an integrated circuit, comprising the steps of:

providing a substrate having a substrate surface;

providing a first dielectric layer comprising molecules of a first compound, the molecules of the first compound having first ends and second ends, the first ends being covalently bonded to a first region of said substrate surface, said second ends having aromatic regions comprising at least y minus 2 conjugated pi-electrons, in which y is an integer of 10 or more;

providing a polycrystalline semiconductor layer comprising organic semiconductor molecules with aromatic portions comprising y conjugated pi-electrons, said polycrystalline semiconductor layer being on said first region of said substrate;

providing a gate electrode;

providing a source electrode;

providing a drain electrode; and

placing said source and drain electrodes in contact with a channel portion of said polycrystalline semiconductor layer on said first region, said gate electrode being positioned to control a conductivity of said channel portion.

21. (New) The semiconductor apparatus of claim 10, in which said fourth ends comprise a charged group.

22. (New) The semiconductor apparatus of claim 21, in which said charged group is selected from the group consisting of carboxylic acid, sulphonate, phosphonate, and amino.

23. (New) The semiconductor apparatus of claim 10, in which said fourth ends comprise a member selected from the group consisting of: biphenyl, phenyl, alkane, carboxylic acid, fluorinated hydrocarbon, and propyl amine.

24. (New) The semiconductor apparatus of claim 10, in which said fourth ends comprise a member selected from the group consisting of alkane thiols and silanes having between 2 and 16 carbon atoms.

25. (New) The integrated circuit of claim 19, comprising a second dielectric layer comprising molecules of a second compound, the molecules of the second compound having third ends and fourth ends, the third ends being covalently bonded to a second region of said substrate surface, said fourth ends comprising no more than y minus 8 conjugated pi-electrons.

26. (New) The method of claim 20, further comprising the step of providing a second dielectric layer comprising molecules of a second compound, the molecules of the second compound having third ends and fourth ends, the third ends being covalently bonded to a second region of said substrate surface, said fourth ends comprising no more than y minus 8 conjugated pi-electrons.